



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

M

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/065,946

12/03/2002

Aaron Joseph Simon

122020

8368

23465

7590

09/02/2004

JOHN S. BEULICK

C/O ARMSTRONG TEASDALE, LLP

ONE METROPOLITAN SQUARE

SUITE 2600

ST LOUIS, MO 63102-2740

EXAMINER

SOLIS, ERICK R

ART UNIT

PAPER NUMBER

3747

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/065,946

**Applicant(s)**

SIMON ET AL.

**Examiner**

Erick R Solis

**Art Unit**

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-17 and 19-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-17 and 19-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Blazejovsky (US Patent No. 4600825). This reference teaches a compression ignition engine fueled with diesel having pressure regulation (12) and temperature regulation (13-15,25). Inherently, the fuel injection is timed to the piston stroke and will occur during the claimed times of intake or compression, as is typical in compression ignition engines.

3. Claims 1,2 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Gallione et al (US Patent No. 4228776). This reference teaches a compression ignition engine (see Fig. 2) fueled with diesel having pressure regulation (8) and temperature regulation (15,24). Inherently, the fuel injection is timed to the piston stroke and will occur during the claimed times of intake or compression, as is typical in compression ignition engines.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5,8-10,15-17,22-24,27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blazejovsky. Blazejovsky applies as above, but does not teach the engine being used in a railroad locomotive, the claimed number of cylinders or the equivalence ratio. It would have been obvious to have applied this type of fuel warming set up to a railroad diesel locomotive engine, so as to prevent paraffin deposits on the fuel filter. Furthermore, the number of cylinders is considered to be an obvious matter of design choice as is the equivalence ratio.

6. Claims 5,8-10,15-17,22-24,27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallione et al. Gallione et al applies as above, but does not teach the engine being used in a railroad locomotive, the claimed number of cylinders or the equivalence ratio. It would have been obvious to have applied this type of fuel temperature regulating set up to a railroad diesel locomotive engine, so as to maintain the fuel temperature within a predetermined temperature range considered necessary for optimum operation of the engine. Furthermore, the number of cylinders is considered to be an obvious matter of design choice as is the equivalence ratio.

7. Claims 1,2,4,7,8,11-14,22, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey in view of Gallione et al. See Dickey, the abstract, col. 2, line 65; col. 3, lines 7+ ; col. 4, lines 39+ ; and col. 5, lines 1,2 and 39-41. Dickey, however, does not teach fuel temperature regulation. Inherently, pressure is regulated. Gallione et al teaches regulating the temperature of fuel in a compression ignition engine, see col. 1, lines 16-23 and Fig. 2. It would have been obvious to one of ordinary skill in the art to have regulated the fuel temperature of Dickey's fuel, as taught by Gallione et al, since this would have aided in regulating the temperatures of the air/fuel charge and combustion.

8. Claims 1,2,5,8-10,12-17, 22-24, 27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeLuca in view of Gallione et al. See DeLuca, the abstract and col. 1, lines 5+. DeLuca, however, does not teach fuel temperature regulation. Gallione et al teaches regulating the temperature of fuel in a compression ignition engine, see col. 1, lines 16-23 and Fig. 2. It would have been obvious to one of ordinary skill in the art to have regulated the fuel temperature of DeLuca's fuel, as taught by Gallione et al, since this would have aided in regulating the temperatures of the air/fuel charge and combustion. Furthermore, the number of cylinders is considered to be an obvious matter of design choice.

9. Claims 1,2,5-17 and 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ancimer et al. in view of Gallione et al. See Ancimer et al, the abstract, and paragraph 28. Ancimer et al, however, do not teach fuel temperature regulation. Gallione et al teaches regulating the temperature of fuel in a compression ignition engine, see col. 1, lines 16-23 and Fig. 2. It would have been obvious to one of ordinary skill in the art to have regulated the fuel temperature of Ancimer et al's fuel, as taught by Gallione et al, since this would have aided in regulating the temperatures of the air/fuel charge and combustion. Furthermore, the number of cylinders is considered to be an obvious matter of design choice as is the equivalence ratio.

10. Claims 1,2,5,6,8,9,13-16,19-23,27-31 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US Patent No. 5365902) in view of Gallione et al. See col. line 14 ; col. 4, line 20 and col. 5, lines 24+. Hsu, however, does not teach fuel temperature regulation. Pressure control is inherent. Gallione et al teaches regulating the temperature of fuel in a compression ignition engine, see col. 1, lines 16-23 and Fig. 2. It would have been obvious to one of ordinary skill in the art to have regulated the fuel temperature of Hsu's fuel, as taught by Gallione et al, since this would have aided in regulating the temperatures of the air/fuel charge and combustion.


### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1,2,4-17 and 19-35 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 3747

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick R Solis whose telephone number is (703) 308-2651. The examiner can normally be reached on Monday-Thursday.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Erick R Solis  
Primary Examiner  
Art Unit 3747

ers  
September 1, 2004